

The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

Paper No. 15

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte KHOSROW KARIM-PANAHI, JAMES H. TERHUNE  
and CHARLES W. DILLMANN

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Appeal No. 1999-1050  
Application No. 08/440,458

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ON BRIEF

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Before COHEN, ABRAMS and McQUADE, Administrative Patent Judges.  
ABRAMS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-5, 7-9, 11, 13-15 and 17, which are all of the claims pending in this application.

We REVERSE.

### BACKGROUND

The appellants' invention relates to a method of mitigating seismic forces on a structure (claims 1-5 and 7-9) and a support system for a structure (claims 11, 13-15 and 17). An understanding of the invention can be derived from a reading of exemplary claim 1, which appears in the appendix to the appellants' Brief.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Buckle	4,593,502	Jun. 10, 1986
Csák	4,651,481	Mar. 24, 1987
Fukahori et al. (Fukahori)	4,830,927	May 16, 1989

The following rejections stand under 35 U.S.C. § 103:

- (1) Claims 1-5, 7-9 and 17 on the basis of Csák and Buckle.
- (2) Claims 11 and 13-15 on the basis of Csák.
- (3) Claim 15 on the basis of Csák and Fukahori.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejections, we make reference to the Answer (Paper No. 14) for the examiner's complete reasoning in support of the rejections, and to the Brief (Paper No. 13) for the appellants' arguments thereagainst.

### OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, the applied prior art references, the respective positions articulated by the appellants and the examiner, and the guidance provided by our reviewing court. As a consequence of our review, we make the determinations which follow.

#### The Rejections on the Basis of Csák and Buckle

Independent claim 1 is directed to a method of mitigating seismic forces on a structure during a seismic event. Among the steps of the method is providing a damped support system for the structure comprising a plurality of support piers surrounded by at least two layers of reinforced concrete on either side of at least one layer of an elastomer,

wherein said elastomer is engineered to include thermal diffusion and damping properties determined as a function of properties of the structure and as a function of an expected seismic event frequency spectrum (emphasis added).

Csák and Buckle both are directed to shock absorption systems for buildings. In the course of the explanation of the rejection, the examiner acknowledged that neither reference taught the step recited above, but took the position that it would have been obvious to one of ordinary skill in the art

to choose an elastomer layer with damping properties . . . selected as a function of the characteristics of the structure and as a function of a seismic frequency since it was known in the art that support systems are constructed

from materials based on the building structure and any anticipated seismic event in order to protect a building structure (Answer, pages 3-4).

The appellants dispute this conclusion on the basis that the examiner has not provided any factual evidence in support thereof.

We find ourselves in agreement with the appellants. Rejections under 35 U.S.C. § 103 must rest on a factual basis, and in making such a rejection, the examiner has the initial duty of supplying the requisite factual basis and may not, because of doubts that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in the factual basis.<sup>1</sup> In the present case, the examiner has not provided any evidence that it was "known in the art" to engineer an elastomer for use in a seismic damping system on the basis of the factors recited in the claim. On this basis, the rejection is fatally defective.

Another deficiency also exists in the rejection of claim 1. It is in regard to the final step, which is

providing for dissipation of heat generated in said elastomer during the seismic event sufficiently to prevent degradation of the damping properties of the elastomer (emphasis added).

It apparently is the examiner's position that this feature is taught by Buckle, but we agree with the appellants that it is not. In the Buckle system, energy, mostly in the form of heat, is

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<sup>1</sup>In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), cert denied, 389 U.S. 1057 (1968).

generated by the absorbing core as it is deformed during a seismic event. The energy is stored both in the core (which is not an elastomer) and in the resilient support that surrounds the core (which is a sandwich of layers of elastomer and stiff plates), and subsequently "is used to return the core to its original mechanical state" (column 5, lines 2-16). Initially, we note that the core disclosed by Buckle is made of lead, whereas the core in the claimed invention is an elastomer. More importantly, however, Buckle has no concern for, and does not disclose or teach, providing for the dissipation of heat generated in the elastomer "sufficiently to prevent degradation of the damping properties of the elastomer."

For the reasons set forth above, it is clear to us that the combined teachings of Csák and Buckle fail to establish a prima facie case of obviousness with regard to the subject matter recited in claim 1.<sup>2</sup> This being the case, the rejection of claim 1 is not sustained. It follows that the rejection of claims 2-4, which depend from claim 1, also cannot be sustained.

Independent method claim 5 also contains steps requiring that the elastomer be engineered to include thermal diffusion and damping properties specified as a function of a predicted seismic frequency spectrum, and providing for dissipation of heat generated in

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<sup>2</sup>A *prima facie* case of obviousness is established when the teachings of the prior art itself would appear to have suggested the claimed subject matter to one of ordinary skill in the art. See, for example, In re Rinehart, 531 F.2d 1048, 1051, 189 USPQ 143, 147 (CCPA 1976).

the elastomer sufficient to prevent degradation of its damping properties. For the same reasons as were expressed above with regard to claim 1, the rejection of independent claim 5 and dependent claims 7-9 also is not sustained.

Apparatus claim 17 is directed to a support system structure comprising at least two rigid reinforcing piers and at least two reinforcing pads sandwiched about an elastomer layer. The claim includes the limitations regarding the damping and thermal diffusion properties of the elastomer that were recited in claim 1, as well as requiring that there be a heat sink "such that the damping properties of the elastomer are not significantly degraded by heat generated during the seismic event." As we explained above, these features are not present in the two applied references, and the rejection of claim 17 will not be sustained.

#### The Rejection on the Basis of Csák

Independent apparatus claim 11 and dependent claims 13-15 stand rejected as being unpatentable over Csák. Claim 11 recites a support system for a structure comprising a plurality of support piers and at least two rigid reinforcing pads sandwiched about an elastomer layer that has damping and thermal diffusion properties selected as a function of characteristics of the structure and of a seismic frequency spectrum expected to be encountered during a seismic event. This rejection suffers from the same shortcomings

as were expressed above with regard to claim 1. The rejection of claims 11 and 13-15 on the basis of Csák is not sustained.

The Rejection on the Basis of Csák and Fukahori

Claim 15 also stands rejected on the basis of these two references. This claim adds to claim 11 (through claim 13) the requirement that there be two elastomer layers having different damping properties. The fact that Fukahori teaches "it is known to construct a support system with layers of rigid and flexible plates . . . with different damping properties" (Answer, page 5) does not overcome the problems with Csák, the primary reference, which were discussed above. Therefore, the rejection is not sustained.

CONCLUSION

None of the rejections are sustained.

The decision of the examiner is reversed.

REVERSED

IRWIN CHARLES COHEN  
Administrative Patent Judge

NEAL E. ABRAMS  
Administrative Patent Judge

JOHN P. McQUADE  
Administrative Patent Judge

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APPEAL NO. 1999-1050 - JUDGE ABRAMS  
APPLICATION NO. 08/440458

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DECISION: **REVERSED**

Prepared By:

**DRAFT TYPED:** 29 Mar 01

**FINAL TYPED:**